

BELLCOMM, INC.

SUBJECT: MIT Software Schedules - Case 310

DATE: October 6, 1967

FROM: W. G. Heffron

MEMORANDUM FOR FILE

MIT (Messrs. Reagan, Battin, Copps, Sears, Millard) presented the attached variety of schedule estimates to H. W. Tindall, MSC, on September 27, 1967. Plan A was in force until September 13, 1967, at which time Plan D was directed. MIT had not previously presented what they thought were valid schedules because of other software programs in progress: they wished to present these now valid estimates and get either approval or redirection. These schedules are somewhat soft because the extensive revisions to the Guidance Software Operations Plan recently made have not yet been incorporated. Principal revisions are (A) a new rendezvous set of procedures and displays (but still the Concentric Flight plan) and (B) changes in certain basic procedures. Compared with the present Sundisk (Earth Orbital CM) program, 43 of 63 programs are affected in varying degree. The schedules are shorter than MIT past experience, based on greater experience and on improved management techniques to be adopted.

Mr. Low and Mr. Kraft reviewed these proposals on September 28, 1967. They directed that MIT find out how Plan G could be accomplished with a release date of 15 February 1968 for Sundance (LM Earth Orbital), 15 May 1968 for Colossus (CM Lunar) and 15 June 1968 for Luminary (LM Lunar).

If met, AS-503 will use Sundisk in CM and Sundance in LM. Procedures and rendezvous would be different. Then AS-504 would use Colossus and Sundance, with identical procedures and rendezvous, and AS-505 would be lunar capable. MIT thinks this impossible, but will examine ways to approach it: Low and Kraft will visit MIT on Saturday October 7.

A "rendezvous tiger team" will be at MIT starting October 2 to define rendezvous. Other MSC people will also be at MIT to expedite GSOP preparation. (9/29/67: Travel freeze at MSC may prevent this.) I offered Bellcomm help.

The point Kraft made is that AS-503 and 4 are, in major part, rendezvous test flights: the omission of the new rendezvous, which MIT estimates to cost 3 1/2 months, would require additional flights.

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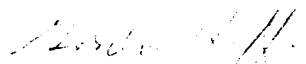
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The point was also made that the Simulators (LMS, LMPS, AMS, etc.) in which the crew evaluates G & N procedures must be made available earlier (late crew evaluation of the rendezvous has the 3 1/2 month impact noted). Mr. Slayton is to be made more aware of this. Presently the trainers are being set up using the GSOP and coding by simulator engineers--MIT programs come too late.

BITS: Sundisk went under Configuration Control 9/21/67. FACI next week (maybe not, see above). "A" release end of October. LM-1 new module went to Raytheon 9/25/67. Fixes include Autopilot, APS on, APS burn time in erasable, purge valves, error in executive.



W. G. Heffron

2012-WGH-bjh

Attachment  
Chart

MTF PROPOSED ALTERNATIVES

	PROGRAM	APPROVED GSOP	PROGRAM A RELEASE		REMARKS
(A)	Colossus Luminary	11/15/67 11/15/67	7/1/68 8/1/68		Both old rendezvous. Was plan until September 13, 1967 but with 2/15/68 A release date
(B)	Colossus Luminary	1/15/68 1/15/68	10/15/68 11/15/68		(A) with new rendezvous
(C)	MOD-Disk	12/15/67	5/15/68		MOD-DISK = Sundisk + new rendezvous, old procedure.
	Sundance	1/13/68	8/15/68		Others have new rendezvous and new procedures
	Colossus Luminary	2/4/68 1/20/68	2/1/69 2/1/69		
(D)	Sundance	11/13/67	5/1/68		None have new rendezvous. Was plan after September 13, 1967.
	Colossus Luminary	12/4/67 11/20/67	7/1/68 11/15/68		
(E)	Colossus Jr	11/27/67	6/1/68		Jr means only parts for Earth Orbital None have new rendezvous
	Sundance	11/13/67	5/1/68		
	Colossus	12/11/67	9/15/68		
	Luminary	11/20/67	12/1/68		
(F)	Colossus Jr	1/27/68	9/15/68		All have new rendezvous
	Sundance	1/13/68	8/15/68		
	Colossus	2/11/68	1/1/69		
	Luminary	1/20/68	3/15/69		
(G)	Sundance	2/13/68	7/15/68		All have new rendezvous
	Colossus	3/4/68	10/15/68		
	Luminary	1/20/68	3/1/69		
LOW/KRAFT DIRECTION	Sundance		2/15/68		Directed by Mr. Low September 28, 1967 Plan G with earlier dates
	Colossus		5/15/68		
	Luminary		6/15/68		

NOTE: Colossus = CM lunar; Luminary = LM lunar; Sundisk, Mod-disk, Colossus Jr = versions of  
CM Earth Orbital; Sundance = LM Earth Orbital.

"A" release + 6 weeks = ropes finished. "A" release + 5 months = earliest launch date  
possible.